

REMARKS

Claims 1-105 are pending. Claims 1 and 42-46 have been amended to more clearly define the invention. Claims 48-105 are new. No new matter has been added.

Claim 46 was rejected under 35 U.S.C. 112 as being indefinite due to a minor typographical error. The claim has been amended to remove ambiguity. Reconsideration and withdrawal of the rejection under 112 is requested.

Claim 1, 3, 19 and 46 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,693,804 to Serwer. The Examiner cited Serwer as disclosing each element of these claims.

Serwer discloses an electrophoresis apparatus that includes a housing with adjustable buffer reservoirs. A lid is provided that can be placed onto the housing. There is no seal between the lid and the housing.

Independent claims 1 and 46 recite, among other things, that the cover is attached to the body with a seal so as to form a substantially liquid tight seal between the cover and the body of the cassette to prevent leakage of buffer during use. Clearly there is no seal between the lid and housing in Serwer. As such, claim 1 and 46 are not anticipated by Serwer. Furthermore, there is no motivation to modify Serwer to include seals since the apparatus in Serwer is a stand alone device that is not intended to be moved during use. The device recited in claims 1 and 46 is a cassette which is designed for insertion into an apparatus. As such, there is a chance that leakage may occur and, as such, a seal is beneficial.

Based on the foregoing, claims 1 and 46 are patentable over Serwer. Claims 3 and 19 depend from claim 1 and, therefore, are also patentable. Reconsideration and withdrawal of the §102 rejection of these claims is requested.

Claims 1, 15, 19 and 46 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,234,400 to Kaplan. The Examiner cited Kaplan as disclosing each element of these claims.

Kaplan relates to an electrophoresis apparatus and, like Serwer, includes a lid that is disposed on a housing. The lid appears to have notches cut in the corners (not labeled). This

would make the apparatus of Kaplan, not liquid tight. This is apparently necessary so that the lid can be more easily removed, since it is not clear how the lid would otherwise be removed.

As discussed above with respect to the Serwer reference, independent claims 1 and 46 recite, among other things, that the cover is attached to the body with a seal so as to form a substantially liquid tight seal between the cover and the body of the cassette to prevent leakage of buffer during use. Clearly there is no seal between the lid and housing in Kaplan. As such, claims 1 and 46 are not anticipated by Kaplan. Furthermore, as discussed above, it appears that the notches are necessary to remove the lid, thus there is no motivation to modify Kaplan to include seals.

Based on the foregoing, claims 1 and 46 are patentable over Kaplan. Claims 15 and 19 depend from claim 1 and, therefore, are also patentable. Reconsideration and withdrawal of the §102 rejection of these claims is requested.

Claims 1 and 3 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,454,925 to Nakanishi. The Examiner cited Nakanishi as disclosing each element of these claims.

Nakanishi relates to a capillary electrophoresis apparatus. The apparatus includes an upper plate that is disposed over a lower plate that includes the capillary. There is no substrate support in Nakanishi since it is not intended to be used with a substrate. Instead, there is a channel that carries a migration liquid in which the samples are placed. Thus, there is no buffer for passing through a solid substrate. Furthermore, there is no seal provided between the upper portion and the lower portion. The upper plate in Nakanishi simply sits on the bottom portion. Thus, there is nothing in Nakanishi that suggests that the device is liquid tight or that there is even any need for such.

As discussed above with respect to the Serwer reference, independent claim 1 recites that the cover is attached to the body with a seal so as to form a substantially liquid tight seal between the cover and the body of the cassette to prevent leakage of buffer during use. Clearly there is no seal between the upper and lower plates in Nakanishi. As such, claim 1 is not anticipated by Nakanishi. Furthermore, there does not appear to be any motivation to modify Nakanishi to add a seal.

Based on the foregoing, claim 1 is patentable over Nakanishi. Claim 3 depends from claim 1 and, therefore, is also patentable. Reconsideration and withdrawal of the §102 rejection of these claims is requested.

Claim 42 has been rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication JP 2001-1188061 to Tanaka. The Examiner has cited Tanaka as disclosing each element of claim 42.

Tanaka relates to a microchip used in an electrophoresis process. The microchip "can be discriminated and specified automatically by an electrophoretic analyzer". There is nothing in Tanaka that suggests that the microchip is used in combination with a substrate. From the translation provided, Tanaka, at best, discloses a microchip that is somehow used during an electrophoresis process.

Claim 42 recites an electrophoresis substrate that includes a substrate for receiving samples on which an electrophoresis analysis is to be performed, and an identification device associated with the substrate for providing information pertaining to an electrophoresis process. There is nothing in Tanaka that suggests the microchip is associated with a particular substrate, only that one is used in an electrophoresis process. That is not enough to anticipate claim 42.

Accordingly, in light of the above, it is respectfully submitted that claim 42 is not anticipated by Tanaka.

Claim 43 has been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 6,146,511 to Slater. The Examiner has particularly cited the abstract and Figure 1 as disclosing each element of claim 43.

Slater relates to an electrophoresis process that includes a substrate 15 and a "contamination dilution reservoir 20". The substrate matrix includes a well for receiving samples of nucleic acids being tested. There is no cutout completely through the substrate.

Claim 43 recites an electrophoresis substrate having at least four edges and at least one cutout formed completely through the thickness of the substrate. Clearly this is not disclosed in Slater. The well in Slater does not extend completely through the substrate. On the contrary, the well provides a location for the initial placement of the samples, as well as the place where the samples are recovered from after the completion of the process. A through-hole would prevent

this from happening.

Thus, it is respectfully submitted that claim 43 is not anticipated by Slater. Reconsideration and withdrawal of the rejection of claim 43 is respectfully requested.

Claim 44 has been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 6,139,709 to Scott. The Examiner has particularly cited Figure 1 as disclosing each element of claim 44.

Scott relates to a device for *forming* an electrophoresis substrate. The features that the Examiner has cited as providing the notches are actually used to form the wells in the substrate. As can be seen in Figure 2, which is the complete apparatus, a cover plate 30 is placed on top of the base plate 20. The gel is formed in between the two plates. A comb 42 is used to form wells in the gel.

Claim 44 related to an electrophoresis substrate having a plurality of edges and at least one notch formed in at least one edge, the notch extending completely through the thickness of the substrate. Scott does not disclose nor suggest a substrate with a notch formed completely through the substrate.

Based on the foregoing, it is respectfully submitted that claim 44 is patentable over Scott. Reconsideration and withdrawal of the rejection of claim 44 is requested.

Claim 45 has been rejected as being anticipated by U.S. Pat. No. 6,592,735 to Meier.

Meier discloses an electrophoresis apparatus for receiving a separation assembly 100. The separation assembly includes separate reservoirs 105, 110, a separation matrix (substrate) located between two support films. A metallization layer is attached to an outside of one of the support films. The electrophoresis apparatus includes an aluminum heat sink onto which the metallization layer is presumably placed. During operation, the heat sink is used to thermally control the separation assembly.

Claim 45 recites a backing for a substrate. The substrate is used in combination with the backing in a cassette for providing electrophoresis analysis. As recited in the claim, the backing and the thermal conductor are provided in combination with the electrophoresis substrate so that the combination is movable into a cassette. Based on the foregoing, it is respectfully submitted that claim 45 is not anticipated by Meier. Accordingly, reconsideration and withdrawal of the

rejection of claim 45 is requested.

Claims 1 and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable (obvious) over Meier in view of Serwer. The Examiner has cited Meier as disclosing all the elements of these claims, except for the provision of a part between a reservoir and the external surface of the cassette. The Examiner has cited Serwer as showing that it would have been obvious to incorporate such a port into the device of Meier.

Independent claim 1 recites that the cover is attached to the body with a seal so as to form a substantially liquid tight seal between the cover and the body of the cassette to prevent leakage of buffer during use. There is no seal shown between the plates and the spacer in Meier. As discussed above, there is no seal disclosed in the device shown in Serwer. As such, neither Meier or Sewer discloses all the features of claim 1.

It is respectfully submitted that claim 1 is not obvious over Meier in view of Serwer since the combination fails to disclose or suggest all the elements of claim 1. Claim 15 depends from claim 1 and is, therefore, also patentable over this combination of references. Reconsideration and withdrawal of the §103 rejection of claims 1 and 15 is respectfully requested.

Allowable Claims

Applicant acknowledges with gratitude the indicated allowance of claims 2, 4-14, 17, 18, 20-41 and 47.

New Claims

Claims 48-105 have been added to the application. These claims all depend from previously pending claims. Specifically, claims 48-62 ultimately depend from allowed claim 35. Claims 63-73 ultimately depend from allowed claims 36. Claims 74-93 ultimately depend from allowed claim 38. Claims 94-105 ultimately depend from allowed claim 40.

Accordingly, these claims should all be allowable.

In light of the foregoing, it is believed that all the claims that are currently pending are allowable over the prior art of record.

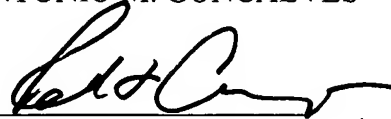
If the Examiner believes that direct communication with Applicant's representative will

facilitate examination of this application, the Examiner is invited to contact the undersigned attorney.

Respectfully submitted,

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